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ABSTRACT

A study was conducted to determine how children in preschool/kindergarten and third/fourth grades would predict whether a boy or a girl would succeed on cohort-defined masculine, feminine, or sex-neutral tasks. Older children predicted the winners along sex-typed dimensions. Boys and girls predicted a male more frequently when the task was masculine, a female when the task was feminine, and a male as often as a female when the task was sex-neutral. Children were also asked to explain their attributions of success by selecting among four factors: ability, effort, task ease, and luck. For children of both grade levels, female success on a masculine task was attributed to effort, not ability. Furthermore, luck was used more frequently to explain the success of an unexpected winner than an expected one. Results obtained with children therefore support attribution theory and previous research with adults. (Author/RH)

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# Children's Causal Attributions of Successful Performance

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## Abstract

Children of preschool/kindergarten age and third/fourth grade were asked whether a boy or a girl would succeed on cohort-defined masculine, feminine, or sex-neutral tasks. Older children predicted the winners along sex-typed dimensions. Boys and girls predicted a male more frequently when the task was masculine, a female when the task was feminine and a male as often as a female when the task was sex-neutral. Children were also asked to explain the success by selecting among four factors: ability, effort, task ease, and luck. For children of both grade levels, female success on a masculine task was attributed to effort, not to ability. Furthermore, luck was used to explain the success of an unexpected winner than an expected one. Results obtained with children, therefore, support attribution theory and previous research with adults.

# Children's Causal Attributions of Male and Female Performance

Consistent with stereotypes, both men and women have been found to value the professional work of a male more highly than that of a female. Goldberg's (1968) research suggested that competency bias does, in fact, favor men. His results indicated that women rated supposedly-published journal articles (even ones in fields considered sex-appropriate for women) more favorably when they were attributed to a male rather than a female author. Goldberg's finding has been replicated in studies requiring both men and women to evaluate the scholarly merit of journal articles (Paludi & Bauer, 1982; Paludi & Strayer, Note 1), the artistic merit of paintings (Pheterson, Kiesler, & Goldberg, 1971), and the qualifications of applicants for employment (Hoefner, 1977; Henemann, 1977; Zickmund, Hitt, & Pickens, 1978).

A considerable amount of research has been conducted to establish the conditions under which a woman's achievement may be regarded as at least as meritorious as a man's. Results from this research have indicated that women are as likely to be described as competent as men when their performance is viewed as exceptional -- either because they (1) succeeded in a male-appropriate field (Jacobson & Effertz, 1974); (2) were acknowledged by an authoritative source (Pheterson, Kiesler, & Goldberg, 1971); or (3) were judged on explicit criteria (Abramson, Goldberg, Greenberg, & Abramson, 1977).

The possibility that equivalent male and female performances are evaluated differently because they are ascribed to different causes has been well documented within the framework of attribution theory. According to this theory (Weiner, 1974; Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971), an individual may succeed on some task because of high ability, effort, good luck, or performance on an easy task. In contrast, failure can result from low ability, lack of effort, bad luck, or a difficult task. These four causal factors vary along two dimensions -- (1) the source controlling the outcome of a given performance (internal vs. external) and (2) the stability of the factor influencing performance outcome over time (stable vs. unstable). Ability is considered to be an internal outcome while task difficulty and luck are external ones. Ability and task difficulty are assumed to be relatively stable factors, wile effort and luck are considered to be relatively unstable.

Research on gender differences in causal attribution for performance using Weiner's framework has indicated that the explanations suggested for the success and failure of men and women differ considerably (e.g., Deaux & Emswiller, 1974; Deaux & Taynor, 1973; Feldman-Summers & Kiesler, 1974; Paludi, 1982; Taynor & Deaux, 1975). A man's successful performance is attributed to his skill, while a woman's identical performance is attributed to luck or effort. Men have been rated superior to women and their successful performance has been attributed to internal stable causes on tasks involving judgments of a male and female art contestant (Pheterson,

Kiesler, & Goldberg, 1971); applicant for a study-abroad program (Deaux & Taynor, 1973), and medical school students (Feldman-Summers & Kiesler, 1974; Paludi, 1982). This tendency for males' success to be viewed as caused by ability and women's success by luck or effort is most pronounced when the task is one in which men are expected to excel.

To date, relatively few studies have examined children's causal attributions of male and female performance. Those studies that have been conducted replicated the findings with adults. For example, Etaugh, Cooley, and Stern (1981) asked preschool and third grade children to explain the success and failure of boys and girls on masculine and feminine tasks. Children were told to select among four causal factors: ability, effort, luck, and task difficulty. Third graders, but not preschoolers, more often attributed the expected outcomes of failing at a sex-inappropriate task or succeeding at a sex-appropriate one to stable factors of task difficulty and ability, not to the unstable factor of luck. Etaugh and Hadley (1977) also found that kindergarten and third graders attributed female success on a masculine task to effort, not ability. Similar findings were also obtained by Etaugh and Brown (1975). Therefore, these results lend support to the prediction that equivalent male and female performance would be explained differently by young children. Attribution theory appears to hold for children as well as adults.

The results with children, however, are limited by the weakness of the experimental designs employed in those studies.

For example, Etaugh and Hadley (1977) asked children to explain a male and female child's success on either a masculine or feminine task. The masculine task selected by the experimenters was constructing a car out of tinker toys; the feminine one was painting a picture. These tasks were selected from prior research by Stein and Smithells (1969) and from Maccoby and Jacklin's (1974) review as being masculine and feminine. It may be more meaningful, both methodologically and theoretically, to define the tasks as masculine or feminine in terms of the modal response of children the same age as for those the research is designed presently. Cultural lag is an important contributor to the dilemma of what is actually being measured by tests of sex-role preference. Responses given in previous research may have reflected, in part, actual sex differences in sex attributions of success at that time. Item content does interact in this research. Furthermore, children have typically been asked to evaluate performance relative to a masculine or a feminine task. To what do children attribute successful performance on a sex-neutral task?

The present investigation had two purposes. Its primary aim was to reexamine children's causal attributions of male and female performance on current cohort-defined masculine and feminine tasks. A second purpose was to determine children's differential evaluations regarding a sex-neutral task.

## Method

### Preliminary Work

#### Task Selection

Activities to be used in this investigation were obtained in the following manner:[2] Forty children of middle-class background from Cincinnati, Ohio and Schenectady, New York (20 boys, 20 girls; mean age = 5.9 years, SD = .85 years), were individually asked the following (adapted from Hartley & Hardesty, 1964):

> Suppose you met a person from outer space who knew nothing about the way we live here. and that person asked you to tell about children in this world. What would you say children play with? What would you say children do? What would you say children like to do when they play grown-ups?

Ninety percent of the children were Caucasian; 10% Black. Items obtained sampled aspects of personality (e.g., independence, nurturance), recreation and play (e.g., coloring, model airplane), peer contacts (e.g., volleyball, bowling), participation in parental activities (e.g., grocery shopping, painting), cultural activities (e.g., movies, theatre), and domestic chores (e.g., house cleaning, cooking). A total of 56 items was obtained.

#### Item Development

Items were presented to 20 boys and 20 girls (mean age = 4.0 years, SD = .80 years) of middle-class background. Ninety-five percent of the children were Caucasion; 5% were Black. Testing was done both in Schenectady, New York and Cincinnati, Ohio. Drawings of all items were used in the development of

the Children's Sex-Role Preference Scale. A detailed description of the item development has been described by Paludi (Note 2) and will be summarized here briefly. Children were administered 28 items in each of two sessions. Every item was randomly assigned to one of two testings. Items were presented in a random order to different children. Each session lasted approximately 15 minutes. Children were asked to decide whether the activity was appropriate for boys, girls, or for both sexes.

Each item was scaled by the method of absolute judgment (Guilford, 1954). A masculine item was given a value of 1; a neutral item 2; a feminine item 3. Mean absolute judgment ratings based on all children were computed for each item. All items were scaled similarly by boys and girls in both the Cincinnati and Schenectady samples. In addition, no significant difference was obtained between the Pearson Product Moment Correlation Coefficients on the mean absolute judgment scale values for both sexes in the Cincinnati and Schenectady samples.

Three items, one masculine, one neutral, and one feminine, were selected from the 56 items obtained in the pilot study. Items chosen were building a car, painting, and baking, scaled as masculine, neutral, and feminine, respectively.

## Experiment Proper

### Subjects

Sixty males and sixty females at each of two grade levels -- preschool/kindergarten and third/fourth in schools and day care centers in Kent, Ohio participated. Approximately 96% of the children were Caucasian, 3% were Black, and 1% Oriental. Boys ranged in age from 3.4 to 10.1 years, with a mean age of 7.2

years (SD = 1.2 years). The age range for girls was from 3.1 to 9.9 years, (SD = 1.5 years). All of the children were from a middle-class socioeconomic background. All children had parental permission to participate in the study.

Procedure

Three female research assistants spent some time with children of each grade level prior to the beginning of the experiment. Each child was tested individually by one of the female experimenters. A series of warm-up questions (from Etaugh & Hadley, 1977) were administered to each child to attempt to ease anxiety and to illustrate that when selecting between two alternatives, the correct selection could appear in either the first or the last position.

The questions asked the preschoolers were the following:

1. Tell me, is your name (child's name) or Billy (Jane)?
2. Are you a (opposite sex) or a (correct sex)?
3. Is it daytime or nighttime now?
4. Are you wearing green shoes or (correct color) shoes?
5. (Pointing to table) Is this a table or a chair?
6. (Holding up a pencil) Is this a pencil or a crayon?

The questions asked the third graders were:

1. Is your teacher's name (correct name) or (incorrect name)?
2. When a traffic light is green, do you stop or go?
3. Is it easier to eat soup with a spoon or a fork?
4. To get to a far-away place very quickly, would you take a bus or a plane?
5. Which is brighter, the sun or the moon?
6. If you mixed together white paint and red paint, would you have pink paint or yellow paint?

Each correct response to these items were praised. Following the sixth question the children were told one of six possible stories:

Girl succeeds on a masculine task

Girl succeeds on a feminine task

Girl succeeds on a sex-neutral task

Boy succeeds on a masculine task

Boy succeeds on a feminine task

Boy succeeds on a sex-neutral task

Ten boys and ten girls at each grade level were assigned randomly to each of these six conditions.

The masculine task story was as follows:

> John and Mary are friends. They both go to kindergarten (third grade). One day, the teacher said to the class, "Today we are going to play a game with tinker toys. I'm going to give each child some tinker toy pieces and I want everyone to make a car out of tinker toys. I'm going to give a prize to the child who builds the best car. That is how we play the game." All the children started to build their cars.

The feminine task story was:

> John and Mary are friends. They both go to kindergarten (third grade). One day, the teacher said to the class, "Today we are going to play a cooking game. I'm going to give each child some cookie mix and I want everyone to make cookies out of their mix. I'm going to give a prize to the child who

makes the best cookies. That is how we play the game." All the children started to make cookies.

The sex-neutral task story was:

John and Mary are friends. They both go to kindergarten (or third grade). One day, the teacher said to the class "Today we are going to play a coloring game. I am going to give a prize to the child who colors the best picture. That is how we play the game." All the children started to color.

Following the reading of the story, the child's prediction concerning the successful story character was determined by asking "Who do you think built the best car (made the best cookies, colored the best picture) -- John or Mary?" The sequencing of "John" and "Mary" was rotated so as to prevent the last name read from receiving a disproportionate number of responses.

After the child's response, the experimenter said the following: "Now I will tell you who built the best car (made the best cookies, picture) -- Mary (for the Girl Success Condition) or John (for the Boy Success Condition). Children were asked to explain why the story character succeeded at his or her task. Children were given six paired-comparison choices representing the six possible combinations of the Weiner, et al. (1971) dimensions. These choices, illustrated with the Boy Success on the Masculine Task Condition, are as follows:

Now, I will tell you who built the best car. JOHN.

Why do you think John built the best car?

Was he a good builder or was he lucky?

Was it an easy car or did he try hard?

Was it an easy car or was he a good builder?

Did he try hard, or was he a good color builder?

Was he lucky or was it an easy car?

Was it an easy car or did he try hard?

The order of the choices within each of the six questions was reversed for each child. The order of the questions was randomly determined for each child.

## Results

### Sex of Predicted Winner

Data concerning the sex of the children's predicted winner were analyzed by means of chi-square tests of independence. Sex of predicted winner was not significantly related to sex of subject for the younger children ($\chi^2 = .88$, $p > .05$). However, sex of predicted winner was related to sex of subject for the third/fourth graders ($\chi^2 = 12.7$, $df = 1$, $p < .001$). Both boys and girls guessed "John" more than "Mary."

Sex of predicted winner was also significantly related to sex of task for the older boys ($\chi^2 = 7.62$, $df = 2$, $p < .05$) and older girls ($\chi^2 = 6.46$, $df = 2$, $p < .05$). Children of both sexes guessed "John" more frequently when the task was masculine, "Mary" when the task was feminine and "John" as often as "Mary" when the task was neutral. Sex of predicted winner was not significantly related to sex of task for younger boys ($\chi^2 = 3.86$, $p > .05$) or girls ($\chi^2 = 4.34$, $p > .05$).

Attributional Choice

Attributional choice data were analyzed by means of a 2 (sex of subject) x 2 (grade level) x 3 (sex of task) x 2 (sex of winner) x 4 (attribution) analysis of variance with repeated measures on the fifth factor. The attributional choices were scored as the number of times each attribution was chosen when presented in paired-comparison form. This procedure was used initially by Falbo (1975) and adapted by Etaugh and Hadley (1977). Statistically significant main effects and interactions involving three or more means were further analyzed by Scheffé post-hoc tests.

A significant main effect for attribution was obtained ($F$ = 53.73, $df$ = 3,648, $p$ < .00001). Effort ($M$ = 2.19) and ability ($M$ = 2.10) were selected more often than were luck ($M$ = 1.64) and task ($M$ = .97).

A significant grade level by attribution interaction ($F$ = 6.79, $df$ = 3,648, $p$ < .0001) was also obtained. Effort was selected more often than ability by the older children, but not by the younger ones; whereas task was chosen more frequently than luck by younger children, not by the older ones.

The significant sex of subject by attribution interaction ($F$ = 7.95, $df$ = 3,648, $p$ < .0001) indicated that girls chose effort more often than ability, whereas boys did not.

The significant sex of subject by sex of task by attribution interaction ($F$ = 5.48, $df$ = 6,648, $p$ < .0001) revealed that success on the feminine task was attributed to effort

more often by girls ($M$ = 2.94) than by boys ($M$ = 2.34). Success on the feminine task was attributed to ability more frequently by boys ($M$ = 2.25) than girls ($M$ = 1.63). Success on the masculine and sex-neutral tasks was attributed to ability by both sexes.

Finally, a significant sex of task by sex of winner by attribution interaction was obtained ($F$ = 7.40, $df$ = 3,648, $p < .001$). A girl's success on a masculine task was attributed more to effort ($M$ = 2.34) than to ability ($M$ = 1.69).

## Discussion

The present investigation sought to reexamine children's attributions of successful performance on current cohort-defined masculine, feminine, and sex-neutral tasks. Weiner, et al.'s (1971) dimensions of attributional choices were used with children of preschool/kindergarten and third/fourth grade levels. The results from this investigation were only partially consistent with previous research with children. Results indicated that equivalent male and female performance is explained differently by children. A girl's success on a masculine task (building the best car from tinker toys) was attributed to effort rather than to luck. This result is consistent with the findings reported with adult subjects (e.g., Deaux & Emswiller, 1974), as well as past research with children (Etaugh & Hadley, 1977). Furthermore, the success of an unpredicted winner (e.g., boy's baking the best cookies) was explained by third/fourth grade children by the external dimension and luck

than was the success of an expected winner. Weiner et al.'s (1971) theory is therefore supported by both of these findings.

In general, a male as the winner was selected more than a female by children of both sexes. Children in the present investigation also predicted winner of masculine and feminine tasks along sex-typed dimensions. This finding is consistent with that obtained by Etaugh and Hadley (1977). Both older boys and girls guessed a male more frequently when the task was masculine (best built car), a female when the task was feminine (best baked cookies), and a male as often as a female when the task was neutral (best made painting). Therefore, it is not surprising that these children attributed female success on a masculine task to effort more than ability. They were exhibiting their knowledge concerning sex-determined role standards and what are appropriate and inappropriate achievements for males and females.

Thus, several of the results of the present investigation support attribution theory and previous findings with older children and adults. In this respect, the findings are not novel. A main contribution of the present investigation, however, concerns the fact that the tasks were cohort-defined, considering cultural lag. It should be pointed out that painting a picture was speculated as a feminine task by Etaugh and Hadley (1977) but defined by children in pilot work for the present study as sex-neutral. Results from previous research should be, therefore, interpreted with caution. Children may not have responded to a "feminine" task as they conceived of it.

The present research, as well as previous ones, is subject to biases as a result of item dimensions unrelated to sex roles. For example, tasks characterized as "feminine" (e.g., cooking, baking) may be labeled as "work," while stereotyped "masculine" and sex-neutral ones may be described more as "play" (e.g., building things with tinker toys; painting). Furthermore, baking cookies takes a lot more skill than painting and may require more adult help. Therefore, children may have discriminated test items on dimensions unrelated to sex-role. This hypothesis offers interesting possibilities for future research.

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2. Paludi, M.A. The children's Sex-Role Preference Scale: Construction of a measuring instrument. Paper presented at the Biennial Convention of the Southwestern Society for Research in Human Development, Galveston, TX, April, 1982.

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## Footnotes

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[2] This procedure also yielded items for the Children's Sex-Role Preference Scale (Paludi, Note 2).